

Pattern of Injury from Road Traffic Accident Presenting at Emergency Department of Kathmandu Medical College

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ABSTRACT

Background: Road traffic accidents are the major public health problem. The objective of the study was to analyze road traffic accidents presenting in Kathmandu Medical College Emergency Department.

Methods: The data from all consecutive road traffic accident cases brought to Emergency Department Kathmandu Medical College Teaching Hospital were collected from 2018 Jan-2018 June. Factors like age of the patients, time of the accident, influence of illicit substances and type of injury were documented.

Results: Males (74) were common victims than the females (26). Eldest patient was 65 years of the age while youngest patient was 4 years. Most common type of injury was fracture in male 28 (37%) and laceration in females 8 (38%). Alcohol intoxication was evident by positive alcohol smell test in 10 (13.6%) males and 6 (23%) females.

Conclusions: Road traffic accidents are major health concern in Kathmandu Medical College Teaching Hospital and preventive measures should be considered to reduce such health burden.

Keywords: Alcohol; Injury; Pattern; RTA.

INTRODUCTION

Road traffic accident (RTA) amounts to majority of cases brought to emergency department for that takes much of the resources. However the things that most concern doctors are the type of injury and parts involved, as it predicts the treatment options and possible outcome of the treatment.^{1,2}

Over 3000 people die every day in road traffic accident in the world; millions are injured and handicapped every year. WHO works with various institutions to analyze the risk factors, patterns of injuries in RTA around the world. Documented risk factors are over speed of vehicles, reluctant to use seat belts and helmet, disregard for traffic rules and driving under the influence of illicit substances. The low socio-economic society has the highest fatality in road traffic accidents.^{3,4} Identification of patients, age, type of injury, body part involved, influence of illicit substances affect the outcome of the treatment.

METHODS

The study was undertaken after the permission from the ethical committee in the Kathmandu Medical College Teaching hospital. This observational study was conducted in the department of emergency from Jan 2018 to June 2018. Total of 100 patients (male-74, female-26) with road traffic accidents were included in the study after taking informed consent. All the consecutive patients with road traffic accident presented in the emergency department were included in the study. Patients with the injury from the fall, industrial accident and fight were excluded from the study. Demographic data including age and sex of the patients were recorded. The patients had come to the hospital themselves or accompanied by other personnel, family members and police. Type of injuries like abrasion, laceration, fracture and cut injury were recorded. The sites of these injuries were also recorded. The presence of alcohol smell to document intoxication was noted in the data to evaluate probable reason for accidents. Lastly according to the severity of trauma, patients with minor injury were discharged

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but patients with major trauma with life threatening condition were admitted. All the data were included in the excel tabulation and calculations were obtained with analysis with SPSS.

RESULTS

A total number of 100 patients of road traffic accident during the period of last 6 months (Jan 2018-June 2018) were analyzed. Among them 74 were males and 28 females the mean age for males were 29.57±13.79 years, the range was 4 to 60 years. For females the mean age was 24.92±13.21 years the range was 8 to 65 years.

Regarding presence of alcohol intoxication in road traffic accident among male patients 86.5% has no smell of alcohol indicating that driving habit may not the major cause of accident. However, 23.1% of female with smell of alcohol and 13.5% of male had accidents which shows drunken female has less control over traffic vehicle (Table1).

Table 1. Frequency of positive alcohol smell.

Gender	Smell of alcohol	Frequency
Male	Present	10 (13.5%)
	Absent	64 (86.5%)
Female	Present	6 (23.1%)
	Absent	20 (76.9%)

The victims of the road traffic accidents either males (51.4%) or females (61.5%) come to the emergency department themselves without accompaniment by family member or police. Some males (54%) were brought to emergency by police while no females were brought by police (Table2).

Table 2. Frequency of accompany persons in Emergency.

Accompanying person	Males	Females
	Frequency (%)	Frequency (%)
Self	38 (51.4%)	16 (61.5%)
Family	32 (43.2%)	10 (38.5%)
Police	4 (5.4%)	0 (0%)

The type of injuries inflicted in road traffic accidents were abrasion, contusion, laceration, fracture and cut injury. Males (37.8%) suffered fracture most in the road traffic accident but females (30.8%) are the ones who suffered laceration most (Table3).

Table 3. Pattern of Injuries and their incidence.

Type of injuries	Male Frequency (%)	Female Frequency (%)
Abrasions	22 (29.9%)	6 (23.1%)
Lacerations	12 (16.2%)	4 (12.4%)
Fractures	28 (37.8%)	8 (30.8%)
Cut injuries	2 (2.7%)	4 (12.4%)
Other	10 (13.5%)	4 (12.4%)
Total	74 (100%)	26 (100%)

The part injured in road traffic accidents were head, neck, chest, abdomen and limbs. All patients with minor chest injury (100%) were discharged. All the patients with blunt abdominal trauma (100%) were admitted.

Sixty six percent of head injury were admitted where as 64.1% of patients with limb injury were discharged with minor dressing or plaster of fracture injuries (Table4).

Table 4. Admission Category.

Part involved	Admission/discharge	Frequency
Head	Admission	8 (66.7%)
	Discharge	4 (33.3%)
Neck	Admission	2 (50%)
	Discharged	2 (50%)
Chest	Admission	4 (100%)
	Discharge	0 (0%)
Abdomen	Admission	2 (100%)
	Discharge	0 (0%)
Limbs	Admission	28 (35.9%)
	Discharge	50 (64.5%)

DISCUSSION

Increasing number of traffic vehicle is causing high incidence of morbidity and mortality worldwide. Human factors like over speed, fatigue, carelessness also result in increased number of road traffic accident. The increasing incidence of road traffic accident are also related to seasonal variations like dry season of December and January where more number of vehicles are used on the road.¹⁻³ Eldest person and young children were also not safe in our road environment and the strict injury prevention strategy are needed in our study. Recent road traffic accidents are not associated with drunk driving in our society as strict regulation of authorities. But in South Africa alcohol drunk driving causes 47% of fatal drivers death and drunken pedestrians account for 72% of traffic death.^{4,5} Bradbusy and colleague stated that clinically apparent alcohol intoxication seemed associated with higher risk of sustaining in severe injury.^{5,6} Majority of road traffic accident patients 37.8%

had fracture in limbs in the study while some study done in Egypt and Edinburgh showed that maximum number of severe injury 72% were sustained in upper part of the body including head, face, neck, thorax.⁶⁻⁹

According to our study males are much more exposed to road traffic accident than females. Other studies done in Delhi and South India also showed similar type of tendency.^{10,11} The region for this may be that males are more relentless drivers and they are also the ones who work most of the time in outdoor.

It was observed that more than half of all road traffic accident injuries were minor in nature and all of them treated and discharged. The pattern of admission and discharged of road traffic accident patients were similar in the studies done in different part of the world.^{12,13} The limitation of our study were include causes of road traffic accident like road condition of our country, use of unmentioned old vehicles, driving without license and not using helpmates and seat belt. These causes were the major cause of road traffic accident which was also clearly shown by other studies.^{14,15}

CONCLUSIONS

Road traffic accidents are a major source of public health concern especially in productive age group. The injuries of the extremities are common presentation and fracture being the most common type of injury.

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